



Webex Agenda, 22 May 2014



1. Update on Colorado logistics and schedule
2. Presentation by Diane Gonzales – new collaborator

Foreign national access must be negotiated for visits to NASA Wallops Flight Facility, NCAR RAF, and NOAA field sites. Please contact Mary Kleb ASAP if someone from your group is missing from the list below.

WFF access – all info has been submitted, awaiting approvals

NOAA access – Names submitted, awaiting instructions from NOAA

RAF access – Follow directions on website (see subsequent slides)

NAME	WFF	RAF	NOAA	NAME	WFF	RAF	NOAA
Balashov, Nikolai (Russia-GC)	No	Yes	Yes	Pahlevan, Nima (Iran-GC)	No	Yes	Yes
Chemyakin, Eduard (Russia)	No	Yes	No	Paynter, Ian (UK)	No	Yes	Yes
Crosbie, Ewan (UK)	No	Yes	No	Sawamura, Patricia (Brazil)	No	Yes	No
Da, Pan (China)	No	Yes	Yes	Sun, Kang (China)	No	Yes	Yes
Eichler, Philipp (Germany)	No	Yes	Yes	Tao, Lei (China)	No	Yes	Yes
Huang, Guanyu (China)	No	Yes	Yes	Wang, Zhousen (China-GC)	Yes	Yes	Yes
Mead, Iq (UK)	No	Yes	Yes	Weibring, Petter (Sweden-GC)	Yes	Yes	No
Mikoviny, Tomas (Slovakia)	Yes	Yes	Yes	Wisthaler, Armin (Italy)	No	Yes	Yes
Mueller, Detlef (Germany)	No	Yes	No	Yacovitch, Tara (Canada)	Yes	Yes	No
Müller, Markus (Austria)	Yes	Yes	Yes	Zardin, Erika (Italy)	No	Yes	No
Orozco, Daniel (Columbia)	No	Yes	Yes				



Lodging for Wallops Flight Facility



Tourist season will be in effect during P-3B integration and download, making it difficult to obtain accommodations within the per diem allowance. We encourage team members to stay at Wallops Lodging Facility when feasible. These rooms are available to everyone except foreign nationals.

Reservations for these rooms need to be made quickly. Please contact Debbie Toth at 757-824-1697 to make your reservation and identify yourself with the DISCOVER-AQ project.

If you are unable to get a dorm room and cannot find accommodation in Chincoteague at per diem, then you will need to stay in Pocomoke City, MD. It is much cheaper and only 20 minutes away versus 15 minutes for Chincoteague.)

General Room availability at Wallops is as follows:

Integration (9 June - 3 July) 10 rooms available

Transit (12-14 July) 10 rooms available

Download (12-15 August) 5 rooms **now available for all days**

If you will be working at Jeffco, **and you do not have** an NCAR badge that allows you to enter the Jeffco facilities please do the following:

1) Watch a security video at this URL: <https://cc.readytalk.com/play?id=hqgwpix> once you do we will receive a confirmation with your name as you enter it on this URL. The passcode is 1081. (see next slide)

2) Send Luci a photograph of yourself, facing the camera (passport style) in jpeg format, with the file named with your name. She will send these to Lou.

If you have an NCAR badge (active UCAR or expired project participant badge), please watch the video and send Lou Lussier the badge number (located on the front of the ID) so that he can update the system with the proper access clearances.

Once this information is complete, RAF will process ID cards for you to access the facility that will be ready for you when you arrive. On arrival, you will need to go to the Foothills Lab to get your badge.

Please review the video and provide your photographs by **14 June**.



Recording Registration

Name Required

Email Required

Phone Required

Company Required

Are you a US Citizen or US
Green Card holder? Required

Provide UCAR ID card
number if you already have
a UCAR ID Required

Passcode: Required

Submit

Help

If you do not have a UCAR ID,
just put any number in this field

Enter 1081 here



Lodging in Colorado



We have reserved a room block at the TownPlace Suites in Broomfield.

The *Discover AQ Group Rate* is available through the following url:

<http://cwp.marriott.com/dentb/nasadiscover>

This webpage will automatically populate our group code. All you need to do is select your dates, number of rooms, number of guests per room, room type, and click “*FIND*.” The next screen will ask you for your Marriott Rewards (optional). Then you can enter all of the guest information and credit card information. Then click “*Continue*” in this screen to book your room. You will then receive a confirmation number.

You can also call the hotel directly at 303.466.2200 and ask for the “*Discover AQ Group Rate*”

Room rates are \$89 for a studio, \$99 for a 1-bedroom, and \$109 for a two bedroom. All rates fall below the per diem of \$111. 2-bedroom reservations should be limited to travelers who have identified another team member to share lodging.



Lodging in Colorado (cont.)



If you have not already made your reservation at Towne Place Suites in Broomfield, please do so ASAP.

As a courtesy to Towne Place Suites and fellow DISCOVER-AQ participants, please update your reservation with your actual travel dates. This will allow DAQ participants to get a room, the hotel to release unused rooms, and prevent the project from being charged for unused rooms.

If you are being reimbursed through NASA/SSAI/EPA and stay more than 29 consecutive nights within a 50 mile radius, the 30-day rule will reduce your lodging and meal allowance to 65% of the normal allowance. Note: Several people have a reservation from 13 July to 13 August. This is 31 nights!

Reminder that this room block is for DISCOVER-AQ only.

Reminder that 2 Bedroom suites are for DAQ participants to double up – not for visiting families or friends.

DISCOVER-AQ

Today



June 2014 ▼

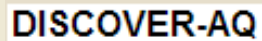


Week

Month

Agenda ▼

Sun	Mon	Tue	Wed	Thu	Fri	Sat
Jun 1	2	3	4	5	6	7
8	9	10	11	12	13	14
	Herndon, Gatebe, Vanderlei Upload					
	Anderson (LARGE), NSERC, Cohen Upload				Wisthaler, Fried, Yang, Barrick Upload	
15	16	17	18	19	20	21
Herndon, Gatebe, Vanderlei Upload						
Wisthaler, Fried, Yang, Barrick Upload				Weinheimer, Diskin Upload		
	Anderson (CAPS) Upload					
22	23	24	25	26	27	28
Herndon, Gatebe, Vanderlei Upload			P3B FIIR	P3B FRR	P3B ATP	
Weinheimer, Diskin Upload						
29	30	Jul 1	2	3	4	5
	P3B ECF	P3B PCF and pack days				



Today ◀ ▶ July 2014 ▼

 Print
 Week
 Month
 Agenda

Sun	Mon	Tue	Wed	Thu	Fri	Sat
29	30	Jul 1	2	3	4	5
	P3B ECF	P3B PCF and pack days				
6	7	8	9	10	11	12
				P3B MRR		
13	14	15	16	17	18	19
	30 day deployment window					
	Transit to CO	Media Day	1st potential scienc			
20	21	22	23	24	25	26
30 day deployment window						
27	28	29	30	31	Aug 1	2
30 day deployment window						

DISCOVER-AQ

Today



August 2014 ▼



Week

Month

Agenda



Sun	Mon	Tue	Wed	Thu	Fri	Sat
27	28	29	30	31	Aug 1	2
30 day deployment window						
3	4	5	6	7	8	9
30 day deployment window						
10	11	12	13	14	15	16
30 day deployment window						
		Transit home				



Integration and Download



Additional instructions for integration

The schedule reflects when racks will be uploaded (i.e. aircrew support). You are more than welcome to come early and work on your rack in the lab or stay and work on your rack once it is uploaded.

All windows will be installed in the first few days (before the racks block the windows).
All windows should be at WFF 1 week prior to the start of integration.

If we get ahead of schedule, racks may be uploaded earlier than scheduled. If you want to be present for the upload of your rack, plan to arrive a few days early or make special arrangements with Martin (i.e. rack brought on plane but not bolted down).

Current status of download

Download of some instruments will occur in Colorado (specifically, **Weinheimer, Fried, and Cohen**). Martin Nowicki is working out the details. Weinheimer will be easy, but Cohen and Fried will have to squeeze through some tight spots.



Shipping



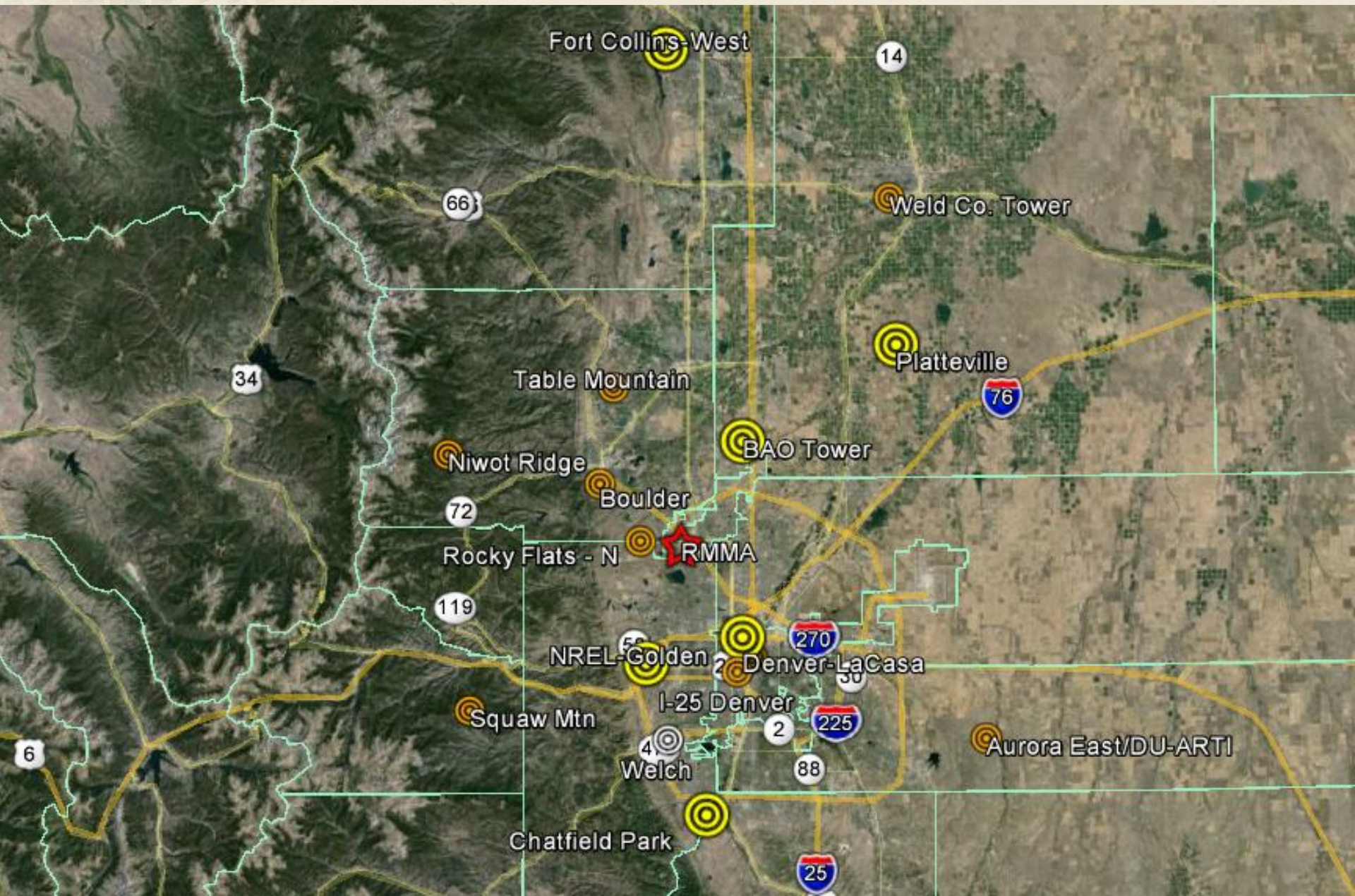
Wallops shipment address

NASA Wallops Flight Facility
Attn: AIRTEC Inc. c/o Brian Yates
Bldg. N-159 Room W139
Wallops Island, VA 23337
Phone: 757-824-1919

Note:

If non-NASA property is being shipped please indicate on the package who property belongs to (institution/agency/company/etc.)

Shipping to Colorado: Please have shipping documents completed and emailed to Luci Crittenden before 24 June. Items will be picked up from both LaRC and WFF.



Name	Spiral	Over-flight	Pandora	Aeronet	EPA NO2	Missed Approach	Lidars	Balloons	Comment
BAO Tower	X		2	X			NOAA-TOPAZ and HRDL, UW-HSRL, H2O DIAL		CSU, 3 mobile hookups, small sensors on tower
Chatfield Park	X		1	X	X				
Denver-LaCasa Ncore	X		2	X	X				
Fort Collins-West	X		1	X	X	500 feet	GSFC TOLNET-O3 and Doppler Wind?		
NREL-Golden	X		2	X	X		MPL, LaRC TOLNet-O3, and Leosphere	Tethersonde	Millersville also brings sodar, flux tower, nephelometer; Pandoras by EPA here, EPA ceilometer, UMBC trailer, NOAA profiler
Platteville	X		1	X	X			Ozonesondes	NATIVE; NOAA radiation; 3 mobile hookups; Pandora by NATIVE here; extra trailer for PTR-MS
Aurora East/DU-ARTI				X					Nothing extra planned for this site
Boulder		X	1	X					Pandora already at this location
CAMP		X							
I-25 Denver			1		X				near-road NO2 monitor
Niwot Ridge			1	X					
Rocky Flats - N		X	1	X	?				
Squaw Mtn			1	X					
Table Mountain		X	1	X					possible ozone monitor
Welch		X							
Weld Co. Tower		X	1	X	?				remote sensors on county building
Greeley-Weld Co. Airport						X			Missed approach along BL run
Parkland Airport						500 feet			Missed approach with BAO spiral

Early installation planned for Aeronet (April) and Pandora (**June**). Groups are working directly with Gordon Pierce at CDPHE.



Laser and Chemical Safety at NOAA sites



Safety information has been requested from both the DISCOVER-AQ and FRAPPE groups who will have operations at either the NOAA Platteville or BAO site. This includes the mobile labs.

We have contacted all relevant groups, but if you think this applies to you, please provide the information requested ASAP.

Required information includes:

LASERS

- 1) Laser safety plan
- 2) Chemicals being used with lasers, provide SDS (aka MSDS) for each
- 3) Cryogenic handling procedures if applicable
- 4) FAA approval, per FAA order JO 7400.2 (outdoor laser operations)

CHEMICALS BEING BROUGHT ON SITE (includes compressed gases)

- 1) Provide SDS (aka MSDS) for each
- 2) The safety plan for usage and what to do in the event of a spill
- 3) Do you have a spill kit for these chemicals?

Because of all the activities at the BAO site there will be NO Open toed footwear allowed (**make sure visitors are also aware of this requirement**).



We are still waiting for final word on the installation of a transformer and 300A service on the far side of the mesa from NREL.

Use of the site is also contingent on final permission from Jefferson County.

NREL has recently announced two power outages in July and August. Each will last 2 days, motivating us to move as much as we can away from the NREL site depending on adequate space and power.

Power requirements include:

Millersville – 100A (prefer two 50A breakers)

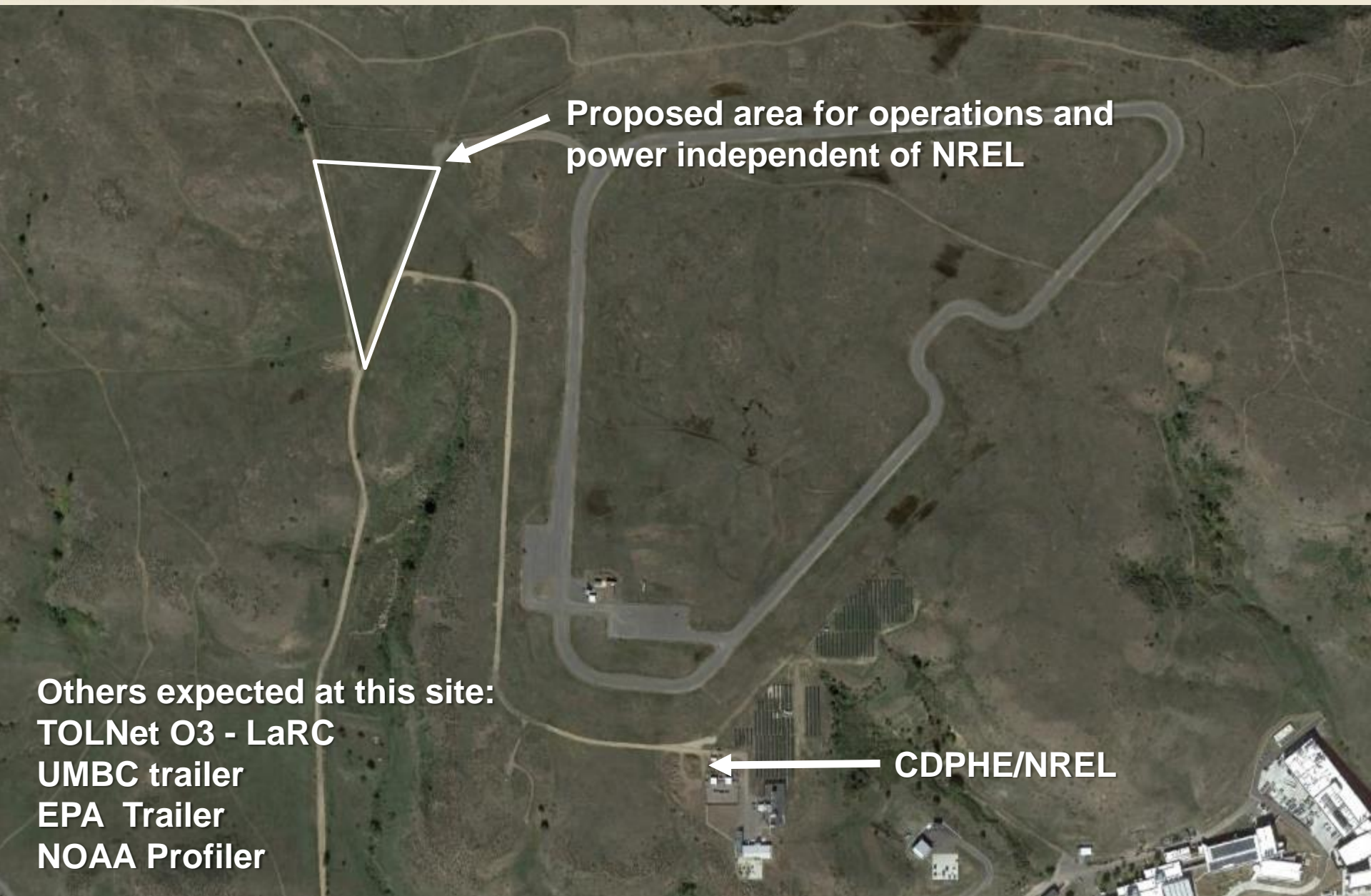
EPA – 100A

UMBC – 40A

LaRC TOLNet Lidar – 50A

This would exhaust all of the available power (as long as space is available).

Need to revisit the site to assess space (see next slide) and distance from power drop for all of the above-listed groups. This still leaves the NOAA profiler which would presumably have to locate at the CDPHE trailer and either use a generator or forego operations during the power outages.



**Proposed area for operations and
power independent of NREL**

Others expected at this site:
TOLNet O3 - LaRC
UMBC trailer
EPA Trailer
NOAA Profiler

CDPHE/NREL

Can we fit everything?



~350 feet

Powerlines along road
(see view above looking SW along
road, field site would occupy the
triangular area west of the road)

NREL-Golden Space and Power Requirements

Group	Power	Space	Comment	Arrive Date	Depart Date	POCs
Millersville	100A @ 120V		Electric connections: 2 trailers each need a NEMA 14-50 receptacle Instrumentation includes: Tethersonde, sodar, flux tower, MPL			Rich Clark; Richard.Clark@millersville.edu
EPA Trailer	100A @ 240V	25' x 15'	Electric connection: Plug to be provided Instrumentation includes: NO2 FRM, CRDS NO2, UVF SO2, 48i CO, T700U Calibrator, 701H ZAG, Ceilometer, Pandoras (2), 42IY NOy			Russell Long; Long.Russell@epa.gov Jim Szykman; James.J.Szykman@nasa.gov
UMBC Trailer	40 A @ 240V	30' x 15'	Electric connection: Bare wire for connecting to breaker box; Instrumentation includes: Sigma Space 527 nm MPL, Leosphere ALS 450 355 nm lidar, Leosphere Windcube lidar, Vaisala MAWS201 weather station, TSI 3563 nephelometer, Metone EBAM 1020, Thermoelectron TEOM, Microtops II portable sunphotometer, Particle-Into-Liquid-Sampler, Sunset Labs OC-EC Analyzer			Ray Hoff; hoff@umbc.edu Chris Hennigan; hennigan@umbc.edu
LaRC O3 Lidar	50A @ 220V	12' x 7'	Electric connection: Can be connected directly but prefer to use a L14-50R receptacle			Russell Deyoung; Russell.J.Deyoung@nasa.gov
NOAA Profiler	30A @ 120V	25' x 25'	Place on CDPHE/NREL side?			Allen White; Allen.B.White@noaa.gov; Clark King; Clark.W.King@noaa.gov

DISCOVER-AQ

Deriving Information on Surface Conditions from Column and Vertically Resolved Observations Relevant to Air Quality

Colorado 2014

Texas 2013

California 2013

Baltimore-Washington, D.C. 2011

➔ Data Archive: DISCOVER-AQ

➔ Data Archive: FRAPPE (NCAR C130)



➔ P3-B Interactive Flight Tracks & Time / Profile Data Plotter

➔ P3-B Profile Summaries - Percentiles Plots

➔ P3-B Merged Data: Extract / Download one or more variables

➔ P3-B Aircraft Forward / Nadir Videos

➔ Submitted and Planned Publications **UPDATED!**



➔ FRAPPE: Related Links

➔ DISCOVER-AQ: Data Related Links

➔ View Reports: Outlook / Flight / Status / QuickLook

➔ Flight Profile Summary

➔ Flight / Profile Times: P3-B / B200

➔ Satellite Overpass Tracks

➔ Data Access & Other Data Sources

➔ ICARTT Data Format Document

➔ Data Management Plan

➔ Related Links & News

Recent Activities

- DISCOVER-AQ Science Team Meeting, 24-28 February 2014
H.J.E. Reid Conference Center, NASA LaRC (Login required)
- DISCOVER-AQ Team Meetings / Presentations / Telecons **UPDATED!**



The overarching objective of the DISCOVER-AQ investigation is to improve the interpretation of satellite observations to diagnose near-surface conditions relating to air quality. To diagnose air quality conditions from space, reliable satellite information on aerosols and ozone precursors is needed for specific, highly correlated times and locations to be used in air quality models and compared to surface- and aircraft-based measurements. DISCOVER-AQ will provide an integrated dataset of airborne and surface observations relevant to the diagnosis of surface air quality conditions from space. >> more

>> Overview (Crawford)

>> DISCOVER-AQ Science

Tools

• Data Scanning/Submittal

Help FScan

• Register PI dataIDs

This is required in order to upload data to the archive.

You can go directly to:

<https://www-air.larc.nasa.gov/cgi-bin/regid>

Or access through the link under “Tools” on the data archive site

Normal UserID/Password applies.

Questions should be addressed to Gao Chen and Ali Aknan.

dataIDs Registration for ICARTT Format Files

A dataID is the first part of an [ICARTT \[type\] data filename \(see the Data Format Document for details\)](#). Each dataID (per platform) must be unique.

DISCOVERAQ / FRAPPE Colorado 2014

IMPORTANT (PLEASE READ)

This registration is **ONLY** valid for the Platforms listed in the "Platform Box". Do **NOT** register if your platform is not listed. **YOUR "PLATFORM DATA MANAGER" IS RESPONSIBLE FOR YOUR DATA ARCHIVING NEEDS.**

The archive directory will be created from LastName.FirstName. Please enter PI name correctly. Also, if you have registered dataIDs before, they **WILL BE OVERWRITTEN** with the new registration. So, make sure you (re)enter **ALL** dataIDs. Each dataID represents a separate group of files in the PI data directory.

PI Last Name* : PI First Name* :

Platform* : Press Ctrl+Click to select multiple items

- P3B (NASA Aircraft)
- B200 (NASA Aircraft)
- C130 (NCAR Aircraft)
- MERGE
- MODEL
- ANALYSIS

dataID(s)* :

**Prepend dataIDs with "discoveraq-" OR "frappe-" separate dataIDs with semicolons*

Link to PI webpage, instrument, or experiment description document:

Optional: to display on LaRC Archive webpage

Text describing PI instrument or experiment (e.g., NASA LaRC DIAL - Troposphere O₃, Aerosols, and Clouds Profiles):

Optional: to display on LaRC Archive webpage

**Required (spaces will be removed)*

Current Registered dataIDs on the Server for DISCOVERAQ / FRAPPE Colorado 2014

PI Name: Last.First	LocationID	Registered dataIDs
BARRICK.JOHN (PI Link)	P3B	discoveraq-pds
YANG.MELISSA (PI Link)	P3B	discoveraq-co2
ANDERSON.BRUCE (PI Link)	P3B	DISCOVERAQ-LARGE-APS;DISCOVERAQ-LARGE-CAS;DISCOVERAQ-LARGE-CIP;DISCOVERAQ-LARGE-CNC;DISCOVERAQ-LARGE-LAS;DISCOVERAQ-LARGE-OPTICAL;DISCOVERAQ-LARGE-SMPS;DISCOVERAQ-LARGE-SP2;DISCOVERAQ-LARGE-

For those new to the process, a link to the Data Format document is provided.

New DataIDs will be needed for those working at ground sites since filenames are site specific.

Others can check the current registered IDs to make sure that they still apply.



Loose ends for Aeronet/Pandora Emplacements



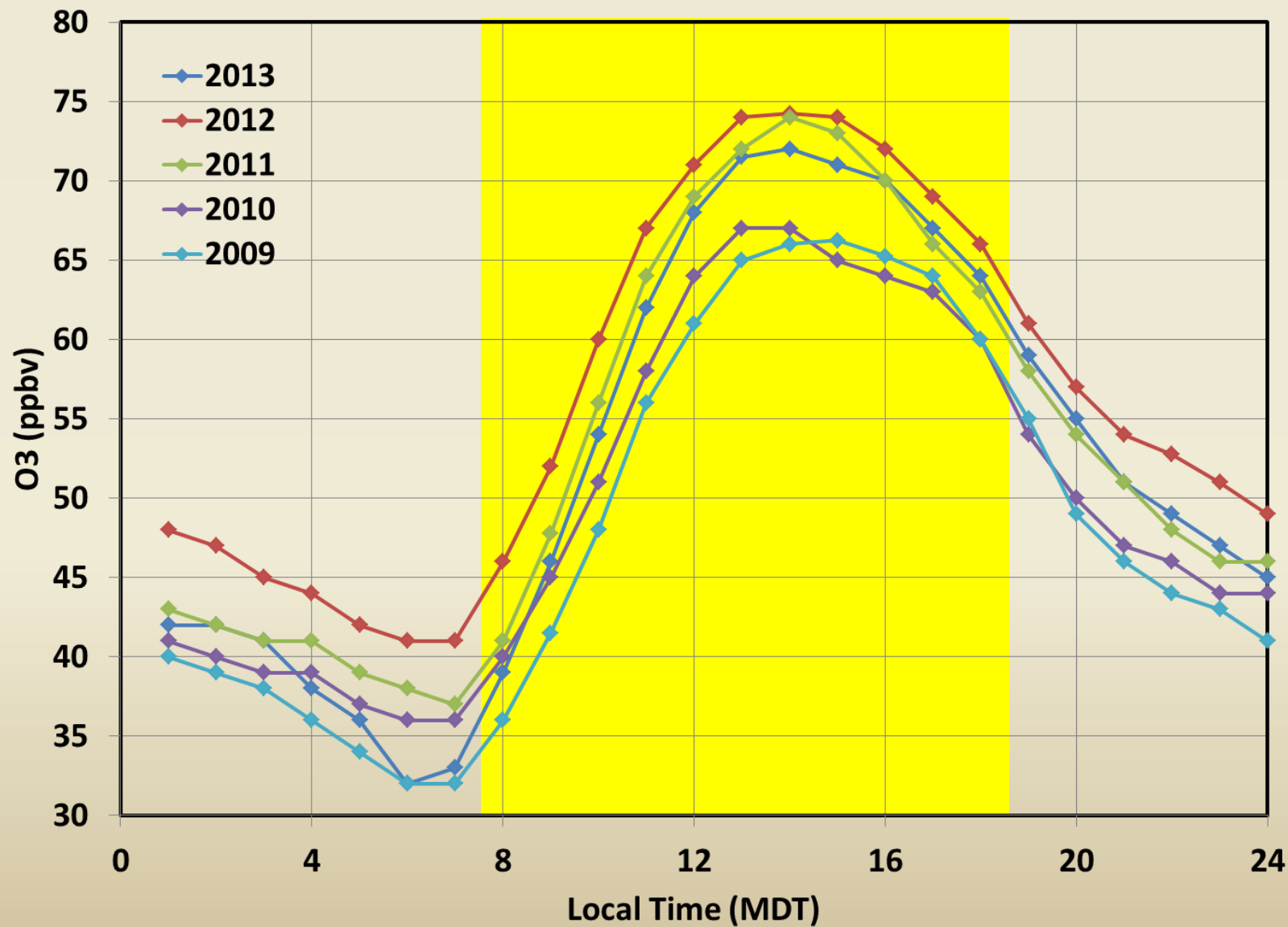
Questions remain for sites at Fort Collins and Squaw Peak

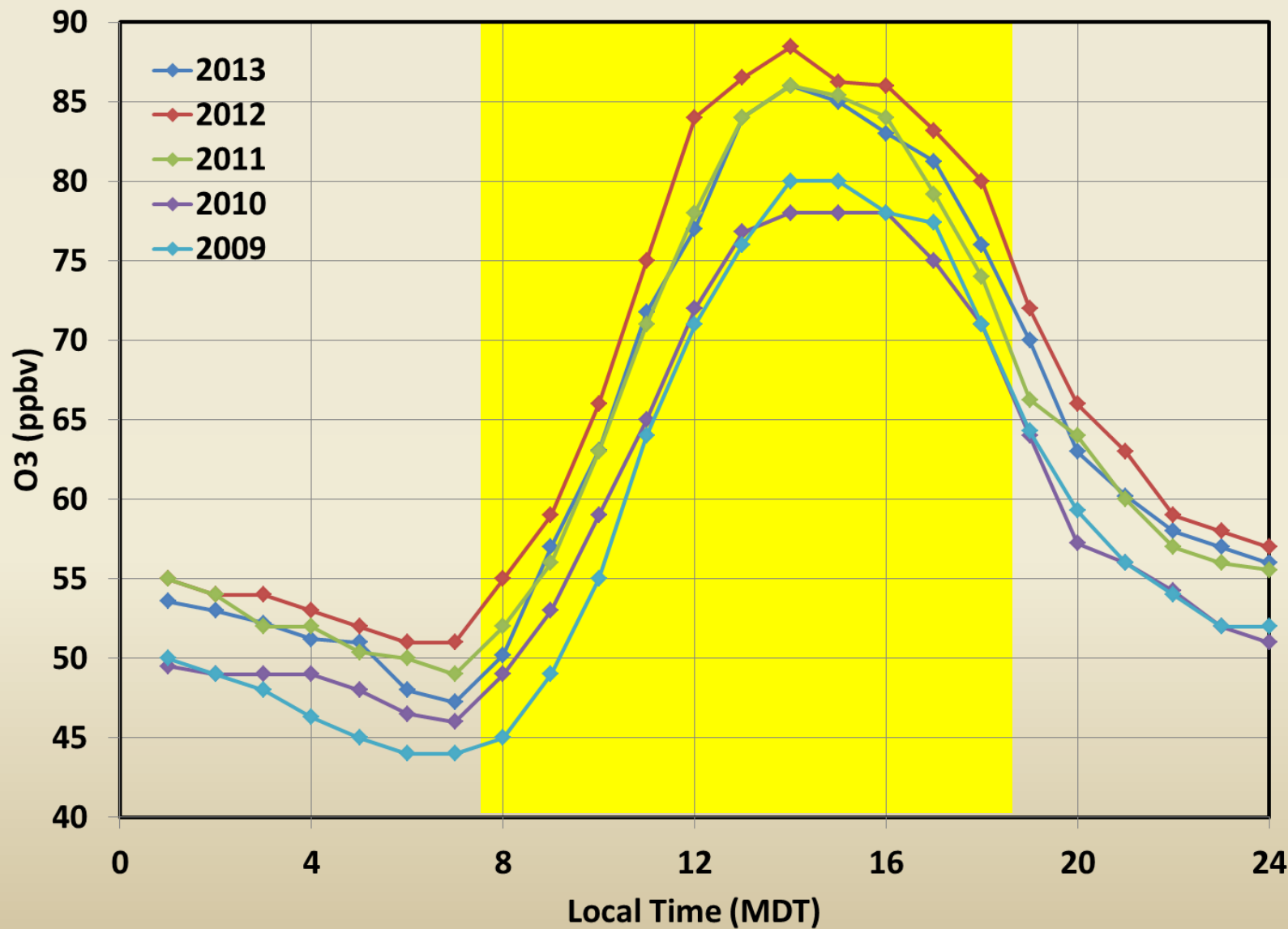
Fort Collins – will need scaffolding for both Aeronet and Pandora
(DISCOVER-AQ can procure if CDPHE or CSU can help us find the resource)

Squaw Mountain – still need some photos to assess 360 degree field of view at this site and infrastructure for siting and power. Also, will hot spots work at this remote location?

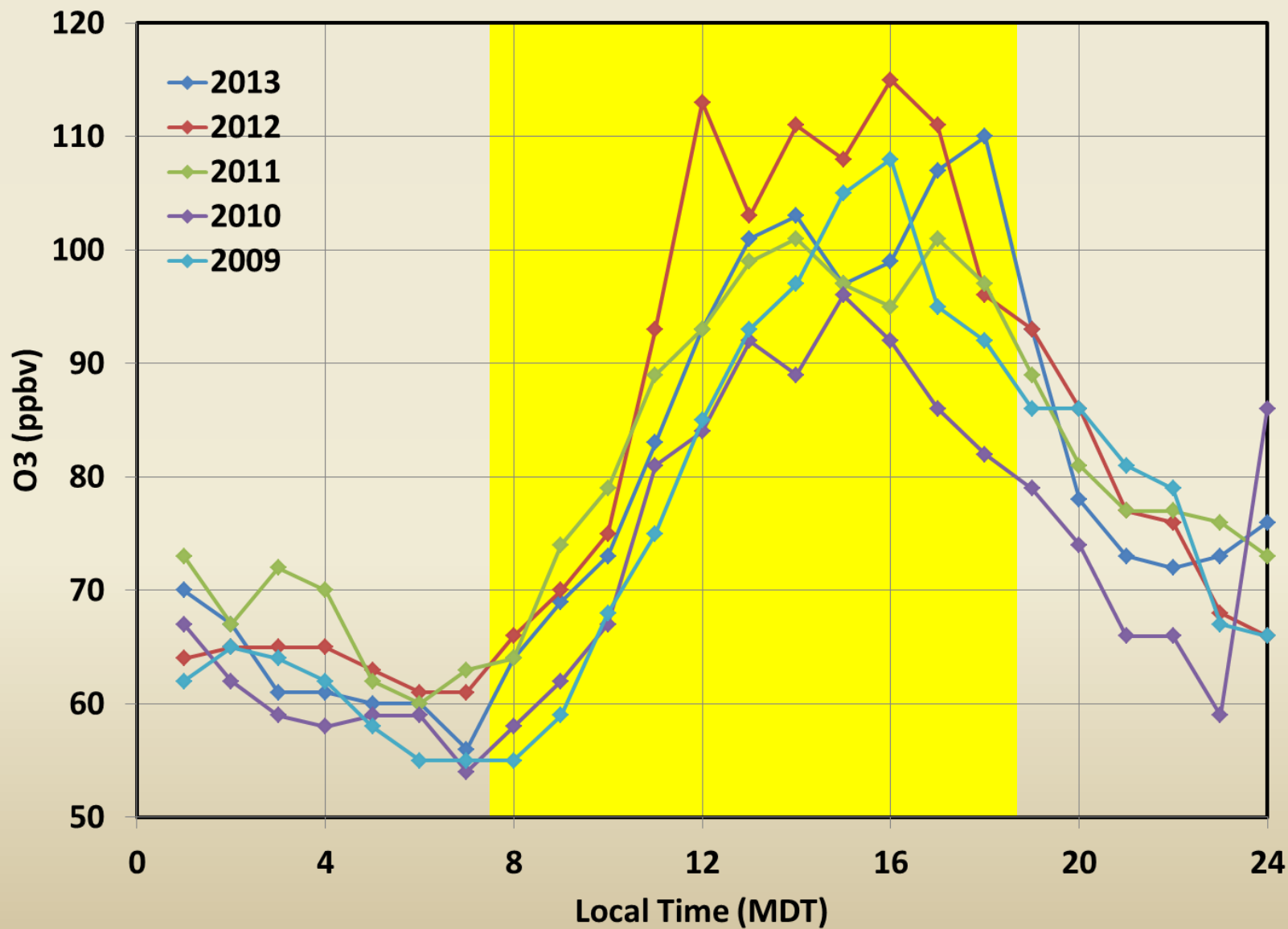
Local Time	Time from Takeoff	Cumulative Time	Event
P-3B			
0500	-3:00	0:00	RAF Opens
0530	-2:30	0:30	P-3B Doors Open
0730	-0:30	2:30	P-3B Doors Close
0800	0:00	3:00	P-3B Takeoff
1600	+8:00	11:00	P-3B Landing
1700	+9:00	12:00	P-3B Doors Close
King Air			
0600	-1:30	0:00	King Air Doors Open
0715	-0:15	1:15	King Air Doors Close
0730	0:00	1:30	King Air Takeoff (Sortie 1)
1130	+4:00	5:30	King Air landing (Sortie 1)
1230	+5:00	6:30	King Air Takeoff (Sortie 2)
1630	+9:00	10:30	King Air Landing (Sortie 2)
1700	+9:30	11:00	King Air Doors Close

Note: P-3B investigators will have only 2.5 hours of pre-flight. In cases of a later take-off a full 3 hours will be provided. King Air pre-flight access is a little longer.





Maximum O₃ for CDPHE sites in DISCOVER-AQ domain (Jul-Aug 2009-2013)



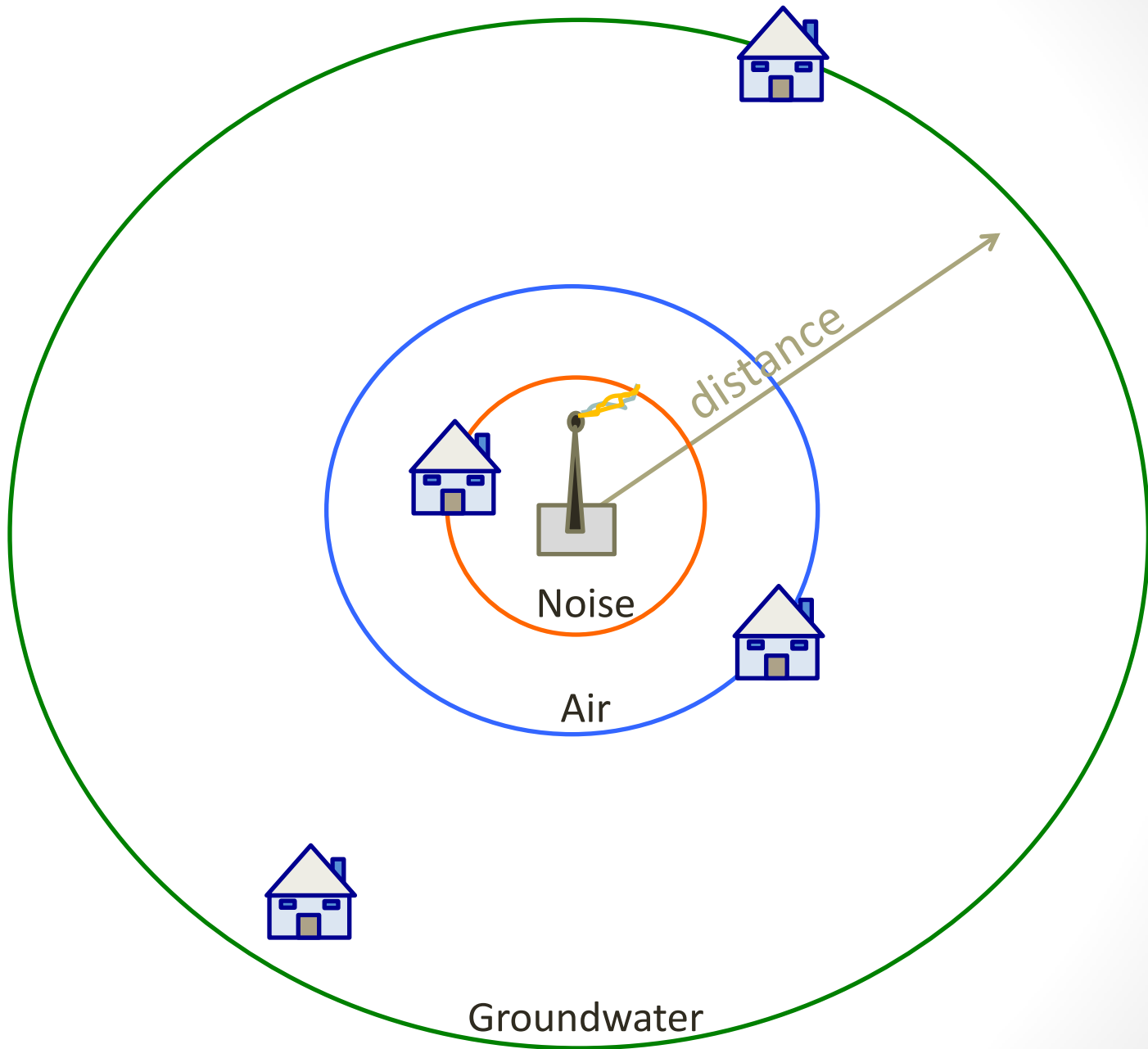
Spatial Analysis of Air Pollution Exposures from Petroleum Well Stimulation

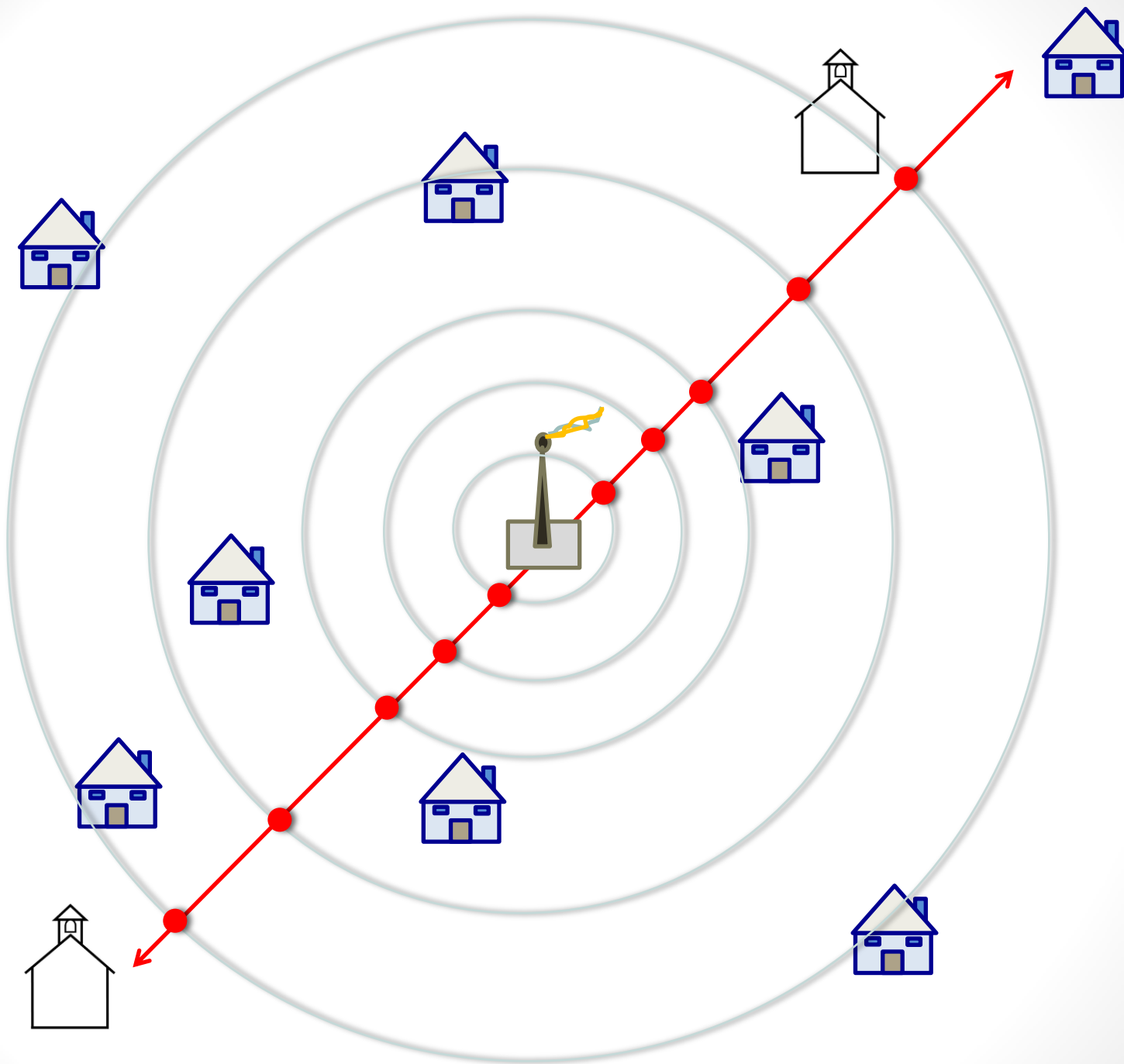
Diane A. Garcia-Gonzales

Project Goal

Understand the scale of human exposure to activities related to well stimulation methods to understand potential human health impacts

- How do air pollution exposures vary due to a function of distance from the source?
- How does the spatial distribution of exposure vary by location or phase?
- How can this information influence public health protection policies?





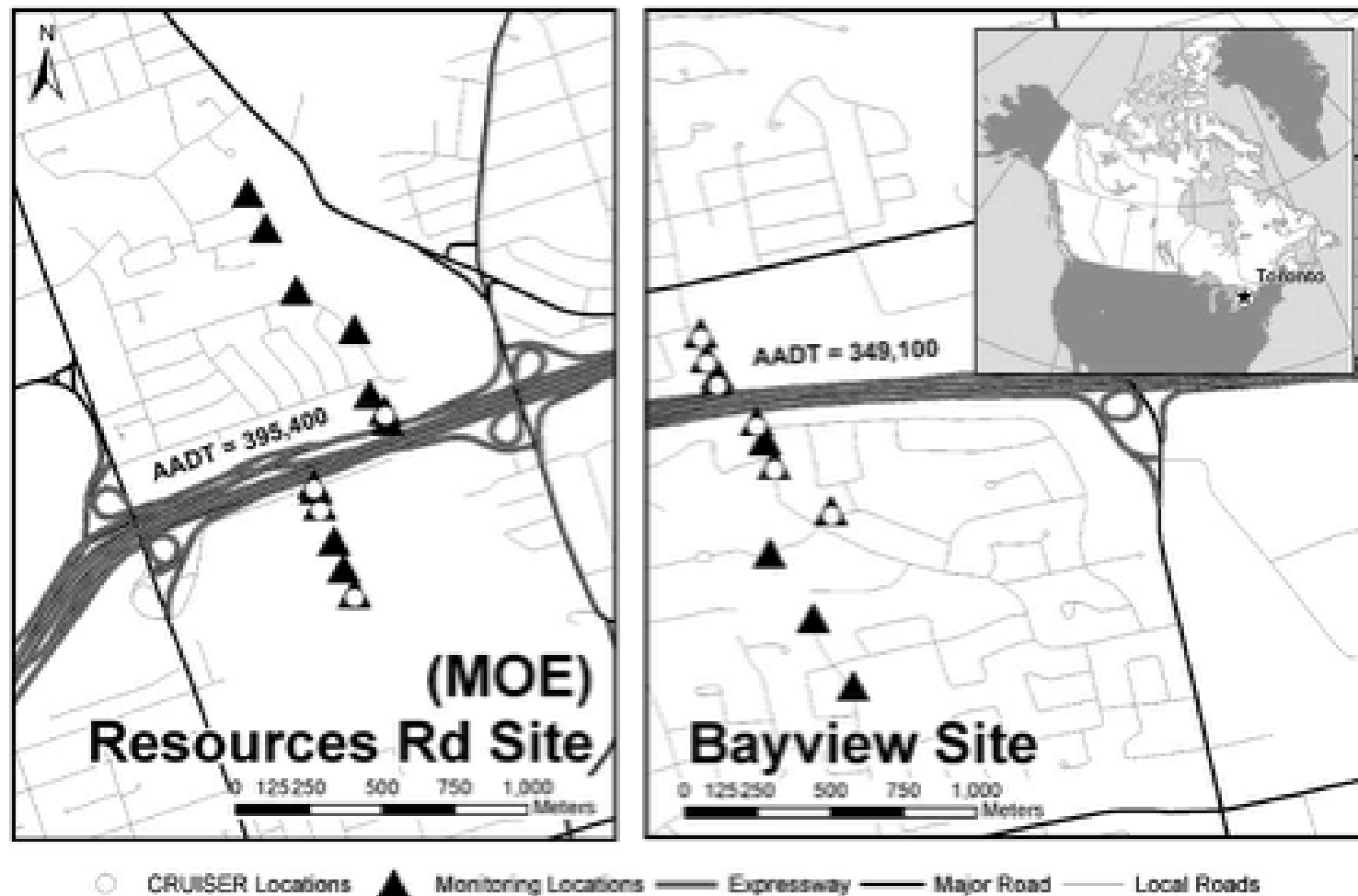
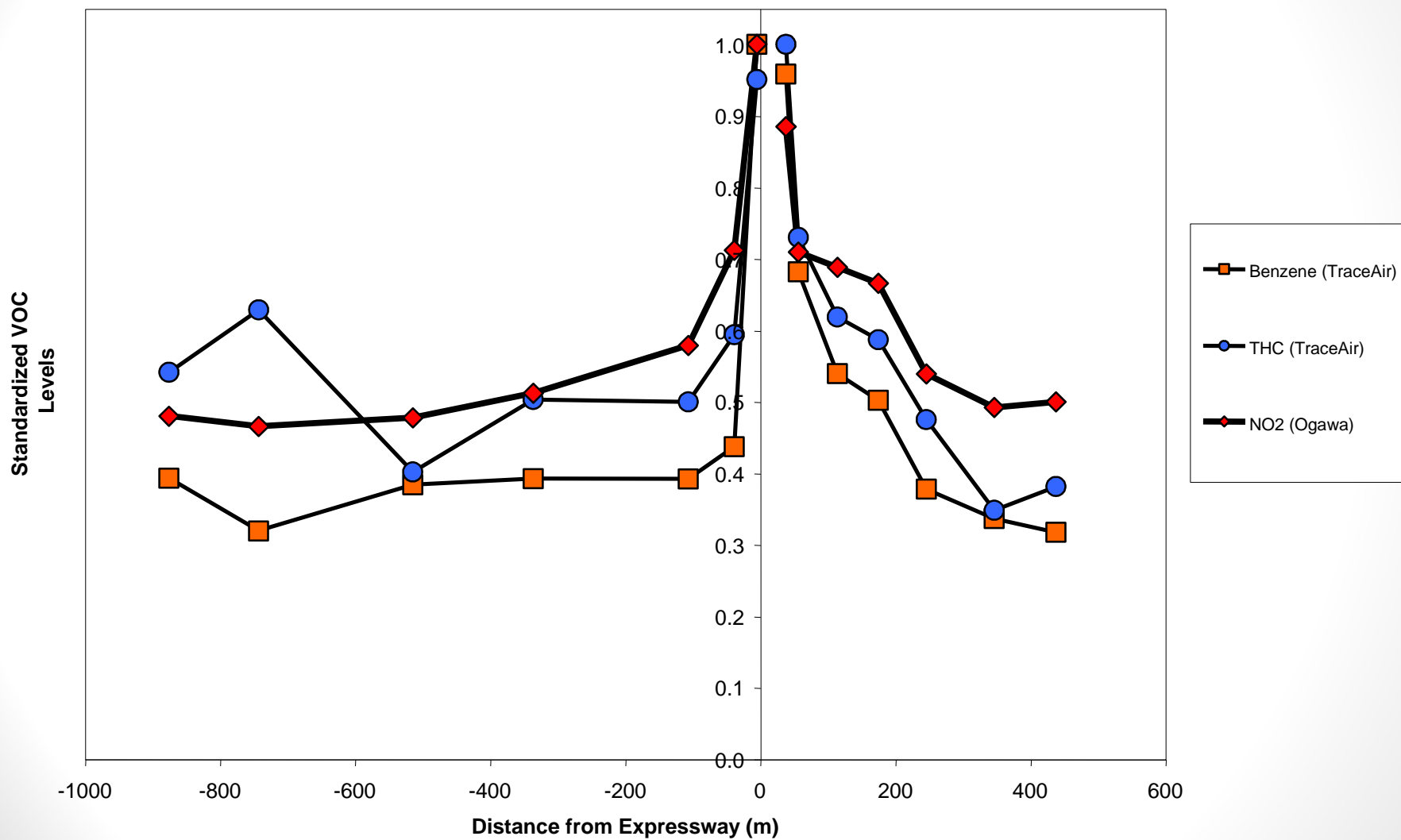


Fig. 1. Site maps with all monitoring locations.

- Beckerman, B., Jerrett, M., Brook, J. R., Verma, D. K., Arain, M. A., & Finkelstein, M. M. (2008). Correlation of nitrogen dioxide with other traffic pollutants near a major expressway. *Atmospheric Environment*, 42(2), 275–290.

VOC (TraceAir) Distance Decay Around Highway 401, Toronto



Instruments

- Cambridge stationary box monitors (in collaboration with R. Jones)
 - Six monitors based on Alfasense Sensors
 - NO₂, O₃, CO, VOC, PM, wind direction
 - Needs continuous power supply
- Passive Samplers
 - 15-20 monitors
 - VOC (BTEX) and hydrocarbons
 - Does not need a power supply



Logistics

- Cambridge monitors
 1. Niwot Ridge (Control)
 2. Erie Community Center (450 Powers St.)
 3. Four additional locations around well stimulation sites
- Passive Samplers
 1. One well stimulation site
 2. Array around receptors (residential and sensitive locations)
 3. Dominate wind direction

Needs

- Suggestions for:
 - Four additional locations around well stimulation sites for Cambridge monitors (e.g. schools)
 - One location around well stimulation sites (ideally around sensitive receptors) for passive samplers
- Potential Collaborators

Future Research

- More extensive monitoring
 - Compare California with Colorado
 - Compare different well stimulation technologies
- Health Effects
 - Birth outcomes
 - Mortality



Future Telecons



5 June

9 June – Integration begins and telecons will become weekly until the deployment begins